

REMARKS

Applicant has considered the Examiner's requirement to amend the title and the applicant has amended the title to "Transmission Mode Signaling with a Slot".

Applicant has amended claims 1 and 15 according to the Examiner's suggestion. Applicant has amended the specification and corrected the drawings based on the Examiner's suggestions. No new matter has been added.

The Examiner rejected claims 2-3 and 16-17 under 35 U.S.C. 112, first paragraph.

The specification has been amended to describe the termination of the slot as recited in claims 2 and 16, as originally filed. The specification has been amended to describe the termination of the transmission lines as recited in claims 3 and 17, as originally filed. Accordingly, claims 2-3 and 16-17 are allowable under 35 U.S.C. 112, first paragraph.

The Examiner rejected claims 1, 4-8, 15 and 18-21 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 3,771,075 (Phelan) in view of U.S. Patent 5,970,393 (Khorrami et al.).

The Examiner asserts that Phelan teaches an apparatus comprising a substrate, a ground plane on the substrate, the ground plane having a slot, parallel arranged transmission lines lying over the slot where the microstrip transmission lines are used as a modular feed network for a phased array antenna, but does not disclose data processing agents each connected to one of the transmission lines. The Examiner admits that a plurality of data processing agents is missing from Phelan so the Examiner looks to Khorrami. The Examiner then concludes "it would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide microstrip transmission lines of Phelan with data processing agents of Khorrami et al. because it would provide input signals and output signals for the microstrip transmission lines."

Applicant's claim 1, as amended, calls for "... inducing a transient return current on the ground plane, propagating energy of the transient return current to the slot. . .".

Phelan neither describes nor suggests inducing a transient return current on the ground plane or propagating energy of the transient return current to the slot. Instead, Phelan teaches "microstrip lines . . . comprises a dielectric sheet or substrate 12 clad or bonded on each side

thereof with a layer of suitable signal conductive metal such as a copper foil.” (col 2, lines 37-42). Phelan also teaches that the two microstrip lines are “electromagnetically coupled through the current maximum existing over the coupling slot.” (col 3, lines 14-16). This is distinguishable from “generating a binary digital signal in the second data processing agent from the transient voltage pulse received on the second transmission line” by “inducing a transient return current on the ground plane”. Instead, Phelan electromagnetically couples the two microstrip lines by creating a “standing wave on said strip conductor so that essentially all of the input power applied to said first microstrip circuit is directly transferred to said second microstrip circuit through said coupling holes with no intermediate transmission medium.” (claim 1, lines 21-26).

Khorrami et al. also fails to teach or suggest “. . . inducing a transient return current on the ground plane, propagating energy of the transient return current to the slot. . . ”. Accordingly, claim 1 is patentable over Phelan in view of Khorrami et al.

Claim 1 is patentable over Phelan in view of Khorrami et al. Applicant's claims 4-8 are dependent upon, and further limit, claim 1. Accordingly, claims 4-8 are patentable over Phelan in view of Khorrami et al.

Applicant's claim 15 calls for “. . . inducing a transient return current on the ground plane, propagating energy of the transient return current to the slot. . . ”. Applicant submits that claim 15 is patentable over Phelan in view of Khorrami et al. for at least the same reasons set out above with respect to claim 1.

Claim 15 is patentable over Phelan in view of Khorrami et al. Applicant's claims 18-21 are dependent upon, and further limit, claim 15. Accordingly, claims 18-21 are patentable over Phelan in view of Khorrami et al.

The Examiner rejected claims 10 and 12 under 35 U.S.C. 102(b) as being anticipated by Phelan.

In the rejection, the Examiner points out that Phelan teaches transmission line strips 15. The Examiner also points out that 15 is provided with signals; the signals being binary data is intended use. The Examiner points out ground plane 13 described in col 3, lines 3-26. Lastly, the Examiner points out that Fig. 3 shows signals propagated along the microstrip lines in a transverse electromagnetic mode.

Applicant's claim 10 calls for "inducing a return current on a reference plane; and transferring energy of the return current to a slot in the reference plane." Phelan does not describe or suggest "inducing a return current on a reference plane; and transferring energy of the return current to a slot in the reference plane." Instead, as stated above, Phelan teaches that the two microstrip lines are "electromagnetically coupled through the current maximum existing over the coupling slot." (col 3, lines 14-16). This is distinguishable from "inducing a return current on a reference plane; and transferring energy of the return current to a slot in the reference plane" because Phelan does not teach using a return current to couple the microstrip lines. Accordingly, claim 10 is patentable over Phelan.

Claim 10 is patentable over Phelan. Applicant's claim 12 is dependent upon, and further limits, claim 10. Accordingly, claim 12 is patentable over Phelan.

The Examiner rejected claims 9, 11 and 14 under 35 U.S.C. 103(a) as being unpatentable over Phelan in view of U.S. Patent 6,133,795 (Williams).

In the rejection, the Examiner points out that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide microstrip transmission lines of Phelan with the Receiving agent of Williams because it would provide input signals in binary digital signal format for the further processing by the signal processing unit.

Applicant respectfully disagrees. Applicant's claim 9 calls for "inducing a transient return current on a reference plane in response to a driving agent sourcing a current onto a first transmission line" and "propagating energy of the transient return current to a slot in the reference plane". As stated above, Phelan neither describes nor suggests inducing a transient return current on the ground plane or propagating energy of the transient return current to the slot. Furthermore, Williams neither describes nor suggests inducing a transient return current on the ground plane or propagating energy of the transient return current to the slot. Accordingly, claim 9 is patentable over Phelan in view of Williams.

Claim 10 is patentable over Phelan in view of Williams. Applicant's claims 11 and 14 are dependent upon, and further limit, claim 10. Accordingly, claims 11 and 14 are patentable over Phelan in view of Williams.

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The Examiner rejected claim 13 under 35 U.S.C. 103(a) as being unpatentable over Phelan in view of Khorrami et al.

Claim 10 is patentable over Phelan in view of Khorrami et al. Applicant's claim 13 is dependent upon, and further limits, claim 10. Accordingly, claim 13 is patentable over Phelan in view of Khorrami et al.

The applicant's discussion of particular arguments of the Examiner should not be construed as a concession by the applicant with respect to any other position of the Examiner. The applicant's assertion of arguments for patentability of certain claims should not be construed as suggesting that there are not also other good reasons why these or other claims are patentable.